

What Is Claimed Is:

1. A glass-ceramic composite material having at least from place to place a glass-type matrix and a ceramic filler,
5 wherein the matrix contains lithium, silicon, aluminum and oxygen, and has at least from place to place at least one crystalline phase.
2. The glass-ceramic composite material as recited in Claim
10 1,
wherein the matrix contains 20 wt. % to 68 wt. % SiO_2 , 10 wt. % to 25 wt. % Al_2O_3 , 5 wt. % to 25 wt. % Li_2O , 0 wt. % to 35 wt. % B_2O_3 , 0 wt. % to 10 % P_2O_5 , 0 wt. % to 10 wt. % Sb_2O_3 and 0 wt. % to 3 wt. % ZrO_2 , or is melted from a starting mixture
15 that contains these substances or that is made thereof.
3. The glass-ceramic composite material as recited in Claim
2,
wherein the matrix contains 48 wt. % to 66 at % SiO_2 , 14 wt. %
20 to 22 wt. % Al_2O_3 , 4 wt. % to 20 wt. % Li_2O , 0 wt. % to 20 wt. % B_2O_3 , 0 wt. % to 5 % P_2O_5 , 0 wt. % to 5 wt. % Sb_2O_3 and 0 wt. % to 2 wt. % ZrO_2 , or is melted from a starting mixture that contains these substances or that is made thereof.
- 25 4. The glass-ceramic composite material as recited in Claim 2 or 3,
wherein the matrix contains 3 wt. % to 33 wt. % B_2O_3 and/or 2 wt. % to 5 wt. % P_2O_5 and/or 1 wt. % to 5 wt. % Sb_2O_3 and/or 1 wt. % to 2 wt. % ZrO_2 , or is melted from a starting mixture
30 that contains these substances or that is made up thereof.

5. The glass-ceramic composite material as recited in Claim 1,

wherein the ceramic filler is aluminum nitride or is aluminum nitride furnished on the surface with a coating or a surface modification, particularly having an average particle size of 100 nm to 10 μ m.

6. The glass-ceramic composite material as recited in one of the preceding claims,

wherein the matrix has as a crystalline phase an $\text{LiAlSi}_2\text{O}_3$ mixed crystal and/or an Li-Al-Si oxynitride and/or an Li-Al silicate and/or an Li silicate and/or an Li-B oxide.

7. The glass-ceramic composite material as recited in Claim 1,

wherein besides the at least one crystalline phase, the matrix has a residual glass phase, especially a residual glass phase in which nitrogen is soluble in a small proportion.

8. The glass-ceramic composite material as recited in one of the preceding claims,

wherein the proportion of the ceramic fillers in the composite material is between 25 vol. % and 60 vol. %, especially 30 vol. % to 50 vol. %.

9. The glass-ceramic composite material as recited in one of the preceding claims,

wherein the composite material has a heat conductivity of 8 W/mK to 12 W/mK.

10. A ceramic foil, ceramic laminate or microhybrid having a glass-ceramic composite material as recited in one of Claims 1 through 8.

11. A method for producing a glass-ceramic composite material, a ceramic foil, a ceramic laminate or a microhybrid as recited in one of the preceding claims, a glass having crystalline regions being melted from a starting mixture
5 having 20 wt. % to 68 wt. % SiO_2 , 10 wt. % to 25 wt. % Al_2O_3 , 5 wt. % to 20 wt. % Li_2O , 0 wt. % to 35 wt. % B_2O_3 , 0 wt. % to 10 % P_2O_5 , 0 wt. % to 10 wt. % Sb_2O_3 and 0 wt. % to 3 wt. % ZrO_2 , and is converted to a glass powder, a ceramic filler, particularly powdered aluminum nitride, is mixed in with the
10 glass powder, and this powder mixture is sintered, especially after the addition of further components.

12. The method as recited in Claim 11,
wherein the powder mixture is pressed before the sintering or
15 is formed particularly to form a foil, a layer or a laminate.

13. The method as recited in Claim 11 or 12,
wherein the sintering is performed at temperatures of at most 1050°C in air, nitrogen or a gas mixture containing oxygen
20 and/or nitrogen.

14. The method as recited in one of Claims 11 through 13,
wherein the powder mixture is prepared before the sintering in a solvent while adding a dispersing agent; and, especially for
25 further processing, an organic binder is added.